1108-60-124 **Sunder Sethuraman*** (sethuram@math.arizona.edu), Department of Mathematics, University of Arizona, Tucson, AZ 85750. *Fractional KPZ stochastic Burgers equations arising from microscopic dynamics.*

We consider interacting particle systems on $\mathbb{Z}$ where particles may displace by y with (weakly-asymmetric) rates proportional to $|y|^{-(1+\alpha)}$. For $\alpha \geq 2$, when the jump law has more than 2 moments, the behavior of many things are the same as if the system had short range interactions.

But, when $0 < \alpha < 2$, the evolution of the 'bulk' mass density and its fluctuations are different. We describe some recent work which derives two types of equations for the limit fluctuation fields, namely fractional KPZ stochastic Burgers and heat equations, depending on a phase transition in terms of the strength of α.

This work is based on http://arxiv.org/pdf/1409.0944v1.pdf (Received January 06, 2015)